

REMARKS

The Office Action of June 17, 2005 has been carefully studied. No claim has yet to be allowed. This amendment provides new claims 11-20 as well as an amendment to claim 1. The following paragraphs correspond to the order of the paragraphs of the Office Action, in pertinent part.

Claim Rejections - 35 U.S.C. 112

Claim 9 is amended so as to change the term "higher" to --final--, which is the usual terminology in the distillation field. The Examiner is thanked for pointing out the error.

The objection to claim 12 in paragraph number 7 of the Office Action obviously refers to claim 10 not claim 12 since claim 12 was not in the case heretofore. In any case, claim 10 is now properly dependent on claim 9.

Claim Rejections - 35 U.S.C. 103

Before commenting on the cited prior art, Applicants respectfully point out that claim 1 is substantially amended so as to clarify the nature of the present invention, in particular, a selective hydrogenation wherein dienes are hydrogenated to olefins while under conditions which do not result in any significant hydrogenation of the olefins. In the context of the present invention, it is clear that olefins are mono-olefins and dienes are diolefins. This is easily discerned by a review of the examples starting on page 10 of Applicants' specification wherein the abbreviation MAV is the measurement of the diolefin content and IBr is a measurement of the olefin content. Examples 1 and 2 employ as a starting gasoline one which is obtained from a catalytic cracking unit, and as seen from Table 1 on page 11, the diolefin content of gasoline A is 14 and the olefin content is 101. In contrast, when Applicants' invention is conducted, as shown in Table 2 at the bottom of page 12 the MAV (diolefin content) is reduced significantly to 0.8 whereas the IBr (olefin content) is hardly diminished at all going from 101 to 98.

In addition to the fact that Applicants' invention is directed to a selective hydrogenation process, it is seen that Applicants' hydrogenation process is conducted so that the nitrogen-containing compounds in the feed are converted to nitrogen-containing compounds which boil

above 55°C, support being found on page 9, lines 7-16 of the specification. Thus, there is support in Applicants' specification for Applicants' amendment to claim 1, indicating that the hydrogenation is conducted under conditions sufficient to convert dienes to olefins and to convert nitrogen-containing compounds to nitrogen-containing compounds having a boiling point higher than 55°C while not significantly hydrogenating the olefins.

Referring now to the Gupta et al. reference (U.S. 6,123,830) of which all of Applicants' original claims were rejected as being obvious under 35 U.S.C. 103(a), it is believed that the present amendment to claim 1 clarifies the fact that Applicants' invention is directed to a selective hydrogenation while converting nitrogen-containing compounds to those which boil above 55°C. Conversely, Gupta et al. is not directed to selective hydrogenation, noting in particular the sentence on column 8 starting at line 14, repeated for the Examiner's convenience as follows:

"It is also desirable that the hydroprocessing stages convert unsaturated hydrocarbons such as olefins and diolefins to paraffins using a typical hydrogenating catalyst". (Emphasis added)

Consequently, Applicants respectfully submit that there would be no motivation to alter the Gupta et al. process so as to provide a selective hydrogenation process according to Applicants' invention. It is also not seen where the reference is suggestive of any process which hydrogenates nitrogen-containing compounds in such a way as to convert them to compounds having a boiling point higher than 55°C which can thereafter be separated so as to result in a product having a very low diolefin content, a very low nitrogen content and a substantial olefin content. Inasmuch as Applicants' concept, manipulative steps, objectives and products significantly differ than those of the reference, it is respectfully submitted that it is proper for the Examiner to withdraw the rejection under 35 U.S.C. 103.

As for specific remarks in the office action, characterizing the teachings and motivations of Gupta et al., Applicants do not necessarily acquiesce to the correctness of same, and reserve the right to rebut same at a later date.

As for Applicants' original dependent claims, they add an additional layer of unobviousness to Applicants' invention; however, in view of the clear patentability of Applicants' claim 1 over that of the reference, Applicants will not discuss the substance of the dependent claims at the present time but reserve the right to do so at a later date if ever necessary.

Newly Added Claims

Support for claim 11 is found on page 9 of Applicants' specification, third line from the bottom. Support for claims 12, 13 and 14 is found on page 8, last paragraph. Support for claims 15 and 16 is found on page 10, third paragraph. As for claims 16-19, they mirror the preceedingly discussed newly added claims but with different dependencies.

These newly added claims add still another layer of unobviousness to Applicants' invention.

In view of the above remarks, favorable reconsideration is believed to be in order in the absence of a more pertinent reference. If there are any remaining issues, however, which can be expeditiously resolved by a telephone conference, the Examiner is courteously invited to telephone Counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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